Manual

MicroWire to 4-20mA Interface

Model 6122

Revision History

File name / Revision	Date	Authors
Previous version BX	2004	RS/ JH
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1. INTRODUCTION

The Model 6122A interface enables you to produce a 4–20mA output from a MicroWire compatible 3-wire synchronous serial signal channel.

The UNIDATA STARFLOW Instrument supports MicroWire as an alternative use of the SDI-12 channel. This allows you to connect any of the instrument channels to a 4-20mA transmitter.

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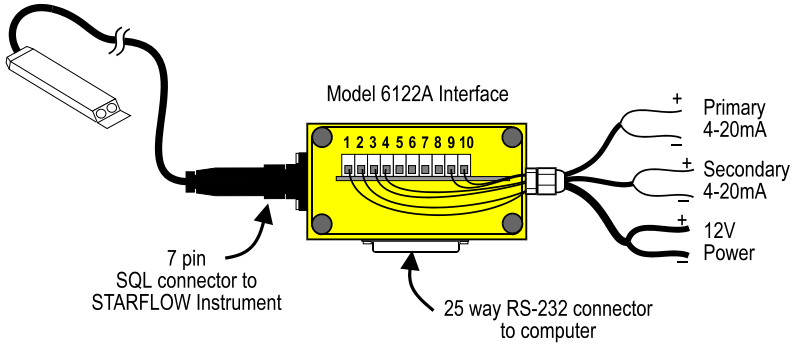
2. CONNECTION

The Model 6122A Interface supports one (optionally two) 16 bit resolution channels.

The Interface is enclosed in a housing which contains a «SQL» socket (for connecting to a STARFLOW Instrument), a 25D socket (for connection to a computer) and a 13mm gland (for 4–20mA signal and 12V power cables.)

A typical connection arrangement is as follows:



12V Power – This connection provides power to the Interface as well as the STARFLOW Instrument.

> Warning: For correct operation of the 4–20mA output, the power supply must not be less than 11 Volts.

4–20mA Output – This sources the 4–20mA output signal that may be connected to any 4–20mA receiver.

> Warning: The 4–20mA -ve signal is also connected to the Power -ve/ground and the secondary 4–20mA -ve signal.

RS-232 Connection – Allows a computer to communicate with the STARFLOW Instrument. A suitable cable is the Model 6602I which is a one-to-one connected 25-pin socket to 9-pin socket cable.

7-Pin «SQL» – Connects to the STARFLOW Instrument.

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3. TERMINATIONS

TERMINAL	SIGNAL NAME	DESCRIPTION	STARFLOW «SQL» Pin #
1	4–20mA +VE	Primary 4–20mA Output Channel	
2	4–20mA –VE		
3	4–20mA +VE (optional)	Secondary 4–20mA Output Channel	
4	4–20mA –VE (optional)		
5	MicroWire LATCH (optional)	External Latch Signal	
6	MicroWire CLOCK	MicroWire Data Transfer signals	5 (purple)
7	MicroWire DATA IN		6 (blue)
8	MicroWire DATA OUT (optional)	Signal extension Link	
9	+12V DC Power	Interface Power	1 (red)
10	–12V DC/Ground		7 (green/brown)
11	+12VDC	Power	
12	-12VDC GND	Power	

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4. SPECIFICATIONS

Power:	11V DC to 18V DC. 3mA plus 4–20mA per channel.
Size:	124mm H x 80mm W x 75mm D.
Resolution:	16 bits, ±0.0015%.
Accuracy:	±0.015%.
Operating Temperature:	–20°C to 60°C.

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5. PROGRAMMING

To use the Model 6122A Interface with a STARFLOW Instrument you must:

1. Choose which channel(s) to connect.
2. Choose the operating range of each channel.
3. Configure the STARFLOW Instrument.
4. (Optionally) Program the STARFLOW Instrument.

Once the STARFLOW is configured, it will update the 4–20mA Interface once every scan (typically at 1 minute intervals).

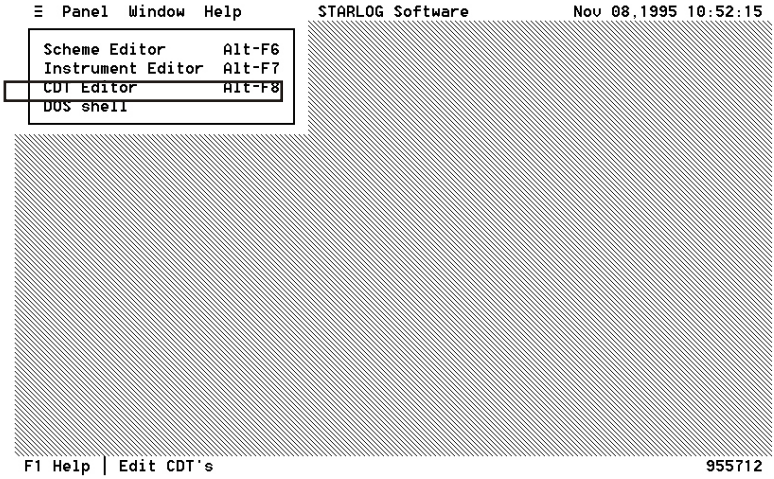
The STARFLOW may also be programmed, using the Version 3 Software, to record measurements in the usual manner. This has no effect on the 4–20mA Interface operation.

5.1. USING THE CDT EDITOR

You need to use the CDT Editor in the STARFLOW Software Package to configure the STARFLOW Instrument for connection to the 4–20mA Interface.

Do the following:

1. Select CDT Editor from the System Menu and Upload the STARFLOW configuration using Alt - U



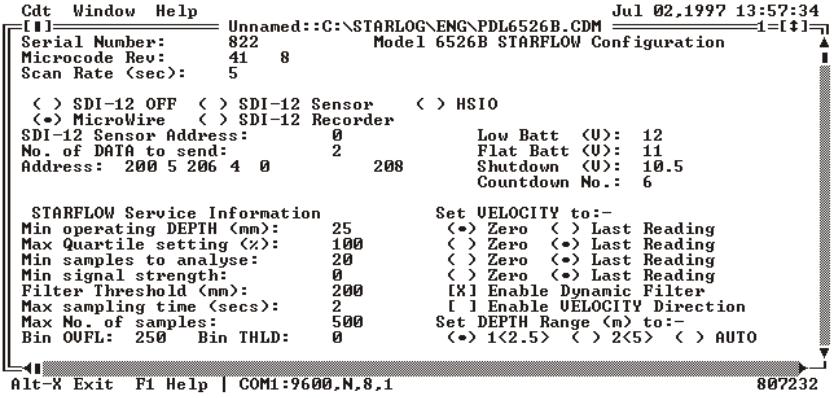
2. Select [•] MicroWire to enable the STARFLOW to use 4–20mA communication.
3. Select the number of channels (DATA) to send, e.g., [1].
4. Select Channel and Scaling pairs as follows:

Channel	Address	Scaling	4–20mA Range
Depth	200	5	0 to 2048 mm
Velocity	206	4	0 to 4096 mm/sec
Temperature	202	4	0 to 540.96°C
Battery	204	5	0 to 20.48V

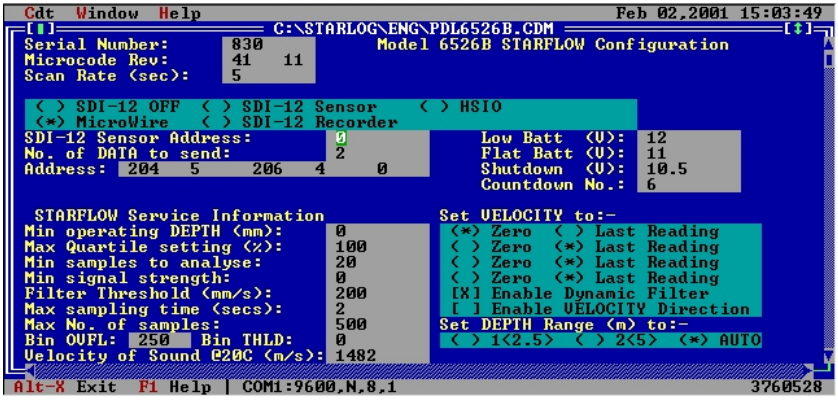
If one channel is defined, the output is on the Primary 4–20mA signal. If two channels are selected, the first defined channel is on the Secondary 4–20mA output and the second defined channel is on the Primary 4–20mA output.

5. Disable VELOCITY Direction.

In the example below, Depth is available on the Secondary Output and Velocity on the Primary Output.


Cdt Window Help
Jul 02,1997 13:57:34
Unnamed::C:\STARLOG\ENG\PDL6526B.CDM
Serial Number: 822
Model 6526B STARFLOW Configuration
Microcode Rev: 41 8
Scan Rate (sec): 5
( ) SDI-12 OFF ( ) SDI-12 Sensor ( ) HSIO
(•) MicroWire ( ) SDI-12 Recorder
SDI-12 Sensor Address: 0
No. of DATA to send: 2
Address: 200 5 206 4 0 208
Low Batt (V): 12
Flat Batt (V): 11
Shutdown (V): 10.5
Countdown No.: 6
STARFLOW Service Information
Min operating DEPTH (mm): 25
Max Quartile setting (%): 100
Min samples to analyse: 20
Min signal strength: 0
Filter Threshold (mm): 200
Max sampling time (secs): 2
Max No. of samples: 500
Bin OVFL: 250 Bin THLD: 0
Set VELOCITY to:-
(•) Zero ( ) Last Reading
( ) Zero (•) Last Reading
( ) Zero (•) Last Reading
( ) Zero (•) Last Reading
[X] Enable Dynamic Filter
[ ] Enable VELOCITY Direction
Set DEPTH Range (m) to:-
(•) 1(2.5) ( ) 2(5) ( ) AUTO
Alt-X Exit F1 Help | COM1:9600,N,8,1
807232

In the following example the battery is on the secondary and the velocity on the primary.


Cdt Window Help
Feb 02,2001 15:03:49
C:\STARLOG\ENG\PDL6526B.CDM
Serial Number: 830
Model 6526B STARFLOW Configuration
Microcode Rev: 41 11
Scan Rate (sec): 5
( ) SDI-12 OFF ( ) SDI-12 Sensor ( ) HSIO
(*) MicroWire ( ) SDI-12 Recorder
SDI-12 Sensor Address: 0
No. of DATA to send: 2
Address: 204 5 206 4 0
Low Batt (V): 12
Flat Batt (V): 11
Shutdown (V): 10.5
Countdown No.: 6
STARFLOW Service Information
Min operating DEPTH (mm): 0
Max Quartile setting (%): 100
Min samples to analyse: 20
Min signal strength: 0
Filter Threshold (mm/s): 200
Max sampling time (secs): 2
Max No. of samples: 500
Bin OVFL: 250 Bin THLD: 0
Velocity of Sound @20C (m/s): 1482
Set VELOCITY to:-
(*) Zero ( ) Last Reading
( ) Zero (*) Last Reading
( ) Zero (*) Last Reading
( ) Zero (*) Last Reading
[X] Enable Dynamic Filter
[ ] Enable VELOCITY Direction
Set DEPTH Range (m) to:-
( ) 1(2.5) ( ) 2(5) (*) AUTO
Alt-X Exit F1 Help | COM1:9600,N,8,1
3760528

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